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Elizabeth A. Dudek 31 December 2002
Signature Date

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the Application of
Vincent T. Kozyrski et al.

for ROTARY CUTTER

Serial No.: 09/822,136

Filed: 30 March 2001

)
) Examiner: D. Watts
) Group Art Unit: 3724
)
)
)
) Docket No. 6611-01

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Washington, D.C. 20231

APPELLANT'S BRIEF TO THE BOARD OF PATENT APPEALS AND
INTERFERENCES PURSUANT TO 37 C.F.R. §1.191

Dear Sirs:

This brief is in furtherance of the Notice of Appeal filed herewith.

I. REAL PARTY IN INTEREST:

The real party in interest is The Fletcher-Terry Company, of Farmington, Connecticut 06032.

II. RELATED APPEALS AND INTERFERENCES:

Appellants and the undersigned attorney are not aware of any other pending patent appeals or interferences that will directly affect, or be directly affected by, or have a bearing on, the Board's decision in the present appeal.

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III. STATUS OF CLAIMS:

A. Total Number of Claims in the Application: 30;

B. Status of All the Claims:

- 1) Claims cancelled: None;
- 2) Claims withdrawn from consideration but not cancelled: None;
- 3) Claims pending: Claims 1-30;
- 4) Claims allowed: None;
- 5) Claims rejected: Claims 1-30;
- 6) Claims objected to: None;

C. Claims on Appeal: Claims 1-30;

IV. STATUS OF AMENDMENTS:

Appellants filed a "Response and Amendment" on 6 March 2002, and a "Response Accompanying Request for Continued Examination Pursuant to 37 C.F.R. §1.114" on 17 September 2002. The amendments requested in both responses were entered. A Notice of Appeal is filed herewith.

V. SUMMARY OF INVENTION:

Appellants provides below a brief description of each claim under appeal, and identify specific cites where support for that claim can be found within the specification. Support for each claim is not, however, limited to those specific cites and in most cases can be found in additional areas of the specification and claims.

Independent claim 1 of the present application claims a hand-held rotary cutter for cutting thin sheet materials that includes a handle having a hand grip portion, and a circular cutting blade having a cutting edge, a diameter, and a thickness. The cutting blade is pivotally mounted to the handle. The diameter of the cutting blade is not greater than fifteen times the thickness of the cutting blade.¹

Claim 2, which depends from claim 1, further claims that the diameter of the cutting blade is not greater than ten times the thickness.²

Claim 3, which depends from claim 3, further claims that the cutting edge includes an edge angle that is not less than forty degrees and not greater than fifty degrees.³

¹ Support can be found in paragraphs 8, 14, and 15, and FIGS. 1-6.

² Support can be found in paragraph 15.

Claim 4, which depends from claim 3, further claims that the cutting edge includes an edge angle that is not less than forty-three degrees and not greater than forty-seven degrees.⁴

Claim 5, which depends from claim 4, further claims that the cutting edge includes an edge angle that is substantially equal to forty-five degrees.⁵

Claim 6, which depends from claim 1, further claims that the diameter of the cutting blade is substantially equal to six times the thickness.⁶

Claim 7, which depends from claim 6, further claims that the cutting edge includes an edge angle that is not less than forty degrees and not greater than fifty degrees.⁷

Claim 8, which depends from claim 7, further claims that the cutting edge includes an edge angle that is not less than forty-three degrees and not greater than forty-seven degrees.⁸

Claim 9, which depends from claim 1, further claims that the cutting edge includes an edge angle that is substantially equal to forty-five degrees.⁹

Claim 10, which depends from claim 1, further claims that the cutting edge includes an edge angle that is not less than forty degrees and not greater than fifty degrees.¹⁰

Claim 11, which depends from claim 10, further claims that the cutting edge includes an edge angle that is not less than forty-three degrees and not greater than forty-seven degrees.¹¹

Claim 12, which depends from claim 11, further claims that the cutting edge includes an edge angle that is substantially equal to forty-five degrees.¹²

Independent claim 13, claims a hand-held rotary cutter for cutting thin sheet materials that includes a handle having a hand grip portion, and a replaceable cutting blade and clip assembly. The cutting blade includes a diameter and a thickness, and the diameter is not greater than fifteen times the thickness. The cutting blade is rotatably

³ Support can be found in paragraphs 9 and 16.

⁴ Support can be found in paragraphs 9 and 16.

⁵ Support can be found in paragraphs 9 and 16.

⁶ Support can be found in paragraph 15.

⁷ Support can be found in paragraphs 9 and 16.

⁸ Support can be found in paragraphs 9 and 16.

⁹ Support can be found in paragraphs 9 and 16.

¹⁰ Support can be found in paragraphs 9 and 16.

¹¹ Support can be found in paragraphs 9 and 16.

¹² Support can be found in paragraphs 9 and 16.

mounted on the clip. The cutting blade and clip assembly is attached to the handle and can be selectively replaced.¹³

Claim 14, which depends from claim 13, further claims that the diameter of the cutting blade is not greater than ten times the thickness.

Claim 15, which depends from claim 14, further claims that the cutting edge includes an edge angle that is not less than forty degrees and not greater than fifty degrees.¹⁴

Claim 16, which depends from claim 15, further claims that the cutting edge includes an edge angle that is not less than forty-three degrees and not greater than forty-seven degrees.¹⁵

Claim 17, which depends from claim 16, further claims that the cutting edge includes an edge angle that is substantially equal to forty-five degrees.¹⁶

Independent claim 18 claims a hand-held rotary cutter for cutting thin paper products that includes a handle having a hand grip portion, and a circular cutting blade having a cutting edge, a diameter, and a thickness. The cutting blade is pivotally mounted to the handle. The diameter of the cutting blade is not greater than fifteen times the thickness.¹⁷

Claim 19, which depends from claim 19, further claims that the cutting edge includes an edge angle that is not less than forty degrees and not greater than fifty degrees.¹⁸

Independent claim 20 claims a rotary cutter for cutting thin sheet materials that includes a support member, and a circular cutting blade having a cutting edge, a diameter, and a thickness. The cutting blade is pivotally mounted to the support member. The diameter of the cutting blade is not greater than fifteen times the thickness.¹⁹

Claim 21, which depends from claim 20, further claims that the diameter of the cutting blade is not greater than ten times the thickness.

Claim 22, which depends from claim 21, further claims that the cutting edge includes an edge angle that is not less than forty degrees and not greater than fifty

¹³ Support can be found in paragraphs 8, 14, 15, and 17, and FIGS. 1-6.

¹⁴ Support can be found in paragraphs 9 and 16.

¹⁵ Support can be found in paragraphs 9 and 16.

¹⁶ Support can be found in paragraphs 9 and 16.

¹⁷ Support can be found in paragraphs 8, 14, and 15, and FIGS. 1-6.

¹⁸ Support can be found in paragraphs 9 and 16.

¹⁹ Support can be found in paragraphs 8, 14, and 15, and FIGS. 1-6.

degrees.²⁰

Claim 23, which depends from claim 22, further claims that the cutting edge includes an edge angle that is not less than forty-three degrees and not greater than forty-seven degrees.²¹

Claim 24, which depends from claim 23, further claims that the cutting edge includes an edge angle that is substantially equal to forty-five degrees.²²

Independent claim 25 claims a rotary cutter for cutting thin sheet materials that includes a handle having a hand grip portion, and a circular cutting blade having a cutting edge, a diameter, and a thickness. The cutting blade is pivotally mounted to the handle. The cutting edge includes an edge angle that is not less than forty degrees and not greater than fifty degrees.²³

Claim 26, which depends from claim 25, further claims that the cutting edge includes an edge angle that is not less than forty-three degrees and not greater than forty-seven degrees.²⁴

Claim 27, which depends from claim 26, further claims that the cutting edge includes an edge angle that is substantially equal to forty-five degrees.²⁵

Independent claim 28 claims a rotary cutting blade for cutting thin sheet materials that includes a body having a diameter and a thickness, a cutting edge extending around the periphery of the body, and an axle aperture. The cutting edge includes an edge angle that is not less than forty degrees and not greater than fifty degrees. The axle aperture extends side to side through the thickness of the body. The diameter of the cutting blade is not greater than fifteen times the thickness.²⁶

Claim 29, which depends from claim 28, further claims that the cutting edge includes an edge angle that is not less than forty-three degrees and not greater than forty-seven degrees.²⁷

Claim 30, which depends from claim 29, further claims that the cutting edge includes an edge angle that is substantially equal to forty-five degrees.²⁸

²⁰ Support can be found in paragraphs 9 and 16.

²¹ Support can be found in paragraphs 9 and 16.

²² Support can be found in paragraphs 9 and 16.

²³ Support can be found in paragraphs 8, 9, and 14-16, and FIGS. 1-6.

²⁴ Support can be found in paragraphs 9 and 16.

²⁵ Support can be found in paragraphs 9 and 16.

²⁶ Support can be found in paragraphs 8, 9, and 14-16, and FIGS. 1-6.

²⁷ Support can be found in paragraphs 9 and 16.

²⁸ Support can be found in paragraphs 9 and 16.

VI. ISSUE:

Whether claims 1-30 are unpatentable under 35 U.S.C. §103(a) over United States Patent No. 2,265,955 “Double Glass Cutter”, issued to Roberts et al. (hereinafter referred to as “Roberts”).

VII. GROUPING OF CLAIMS:

In the present application the Examiner has rejected claims 1-30 under 35 U.S.C. §103(a) as being unpatentable over Roberts. Appellants respectfully submit that the claims 1-30 should not be considered to stand or fall together. The subject matter of the following groups of claims are believed to be separately patentable: (1) claims 1, 2, 6, 18, 20, and 21; (2) claims 3-5, 7-12, 15-17, 19, and 22-30; and (3) claims 13 and 14.

VIII. ARGUMENT:

Claims 1-30 are rejected under 35 U.S.C. §103(a) as being unpatentable over Roberts. Specifically, the Examiner indicates that “[t]he reference appears to show the claimed details of the blade such as a diameter to width ratio of less than 10 and an edge angle of approximately 45 degrees. If the article is not approximately 45 degrees however it would appear to be an obvious matter for an artisan to specify such an angle which would create no new or unobvious results.” Appellants respectfully disagree with the Examiner’s characterization of Roberts and the rejection based thereon.

Roberts discloses a “Double Glass Cutting Device” that “relates to a device for cutting glass and is more particularly designed to cut ‘shatter-proof’ glass” (col.1, lines 1-3). The Roberts device includes a pair of cutting wheels 19,27 mounted on the arms 10,11 of a rigid frame. A spring 25 acts on wheel shaft 22 to push cutting wheel 27 toward cutting wheel 19. The travel of the wheel shaft 22 and connected cutting wheel 27 is limited by the head 23 attached to the wheel shaft 22. FIGS. 1 and 3 show wheels 19 and 27 separated from one another by a gap. There is no written disclosure within Roberts regarding attributes of either cutting wheel 19, 27. There is no disclosure within Roberts regarding any use of the device disclosed by Roberts other than glass cutting. Indeed, the gap between wheels 19 and 27 would preclude its use as a thin sheet material cutter.

When an application is submitted to the Patent and Trademark Office, statute²⁹ and case law³⁰ dictates that the burden of proof is on the PTO to establish a prima facie case of obviousness.³¹ Once the prima facie case has been established, then the burden of going forward with the evidence to rebut the prima facie case shifts to the applicant.³² Only the burden of going forward with evidence to rebut shifts to the applicant, however. The burden of persuasion remains with the PTO.³³ In this instance, a prima facie case must establish that the teachings of Roberts render the claimed subject matter obvious. Regarding the edge angle claimed within the present application, the prima facie case must also establish a suggestion or motivation within Roberts to make the modification suggested by the Examiner.³⁴ It is well-settled law that "the legal conclusion of obviousness must be supported by facts".³⁵ The suggestion or motivation to modify the reference must not be based on hindsight.³⁶ Indeed, the lack of an appropriate motivation or suggestion to modify gives rise to an inference that the modification is the product of hindsight.³⁷

(1) Claims 1, 2, 6, 18, 20, 21:

Regarding claims 1, 2, 6, 18, 20, and 21, a prima facie case must establish that the teachings of Roberts render obvious the claimed rotary cutter for cutting thin sheet materials.

²⁹ 35 U.S.C. 132.

³⁰ See In re Warner, 154 USPQ 173, 178 (C.C.P.A. 1967); In re Oetiker, 24 USPQ 2d 1443, 1447 (Fed. Cir. 1992).

³¹ In re Piasecki, 223 USPQ 785, 788 (Fed. Cir. 1984).

³² In re Carleton, 202 U.S.P.Q. 165,168 (CCPA 1979).

³³ Ashland Oil v. Delta Resins and Refractories, Inc., 227 U.S.P.Q. 657, 659 (Cir. Fed. 1985). See also In re Fritch, 23 U.S.P.Q.2d 1780, 1783 (Cir. Fed. 1992): "In proceedings before the Patent and Trademark Office, the Examiner bears the burden of establishing a prima facie case of obviousness based upon the prior art. '[The Examiner] can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references.' The patent applicant may then attack the Examiner's prima facie determination as improperly made out, or the applicant may present objective evidence tending to support a conclusion of nonobviousness.",.

³⁴ In re Fritch, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992), "Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under section 103, teachings of references can only be combined if there is some suggestion to do so. Although couched in terms of combining teachings found in the prior art, the same inquiry must be carried out in the context of a purported obvious "modification" of the prior art. The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification" citing ACS Hosp. Systems, Inc. v. Montefiore Hosp., 221 USPQ 929 (Fed. Cir. 1984) and In re Gordon, 221 USPQ 1125 (Fed. Cir. 1984).

³⁵ In re Warner, 154 U.S.P.Q. 173,177 (CCPA 1967); In re Piasecki, 223 U.S.P.Q. 785 (Fed. Cir. 1984); Graham v. John Deere, 383 U.S. 1 (1966).

³⁶ In re Fritch, 23 USPQ2d 1780 (Fed. Cir. 1992), "[o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention", quoting In re Fine, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988).

As stated above, Roberts discloses a “glass cutter” not a “rotary cutter for cutting thin sheet materials” as is claimed in the present application. The differences between a “glass cutter” and a “rotary cutter for cutting thin sheet materials” are significant.

Appellants respectfully submit that the term of art “glass cutter” when used with devices such as that disclosed by Roberts is a misnomer. The “cutting wheels” of Roberts actually do not and cannot cut glass in the sense of shearing through the glass material. “If you literally tried to cut glass, it would shatter into pieces.”³⁸ Glass is an amorphous solid that is not amenable to conventional cutting techniques (i.e., techniques for shearing through). Rather, force applied to a glass substrate through a “cutting wheel” creates a fissure on the surface of the glass that includes a pair of compression lines within the glass substrate. If sufficient bending force is subsequently applied to the glass substrate along the fissure, the substrate will fracture between the compression lines thereby creating a “cut”. Hence, the “cutting wheel” does not cut the substrate, but rather creates a fault line along which the substrate can be fractured with geometric predictability. The mechanics by which glass “cutting” takes place are well known. In their response of 3/6/2002, appellants submitted pages from a brochure describing glass cutting products offered by The Fletcher-Terry Company. The pages include a description of the mechanism by which glass is “cut”.

Claims 1, 2, 6, 18, 20, and 21 of the present application, in contrast, recite a *rotary cutter for cutting thin sheet materials* (e.g., paper, cloth, and plastic). The claimed geometry of the circular cutting blade makes it a proficient tool for cutting through, rather than scoring the surface of, thin sheet materials. The safety, durability, ease of use, and quality of cut provided by the present rotary cutter are directly related to the claimed geometry of the rotary cutting blade.

Hence, the “glass cutter” device of Roberts is fundamentally different from the “rotary cutter for cutting thin sheet materials” recited in claims 1, 2, 6, 18, 20, and 21 of the present application. In fact, the Roberts “Double Glass Cutter” is a non-analogous device used to score glass.

“In order to rely on a reference as a basis for rejection of the applicant’s invention, the reference must either be in the field of the applicant’s endeavor or, if not, then be

³⁷ In re Rouffet, 47 USPQ2d 1453, 1458 (Fed. Cir. 1998).

³⁸ See the Fletcher-Terry glass cutting products brochure submitted with appellants’ response of 3/6/2002.

reasonably pertinent to the particular problem with which the inventor was concerned”.³⁹ In the present case, Roberts discloses a glass cutting device. As shown above, “glass cutters” (like that disclosed in Roberts) are nonanalogous art relative to the claimed rotary cutter for cutting thin sheet materials for at least the reason that the two devices operate in fundamentally different ways; i.e., scoring versus cutting. Hence, a scoring device such as that disclosed by Roberts is not in the field of endeavor of appellants’ device, and is not reasonably pertinent to the problem of cutting thin sheet material.

In addition to being a non-analogous device, the “Double Glass Cutter” device disclosed by Roberts is also not operable for cutting thin sheet materials. As described above, the Roberts device includes a pair of cutting wheels 19,27 mounted on the arms 10,11 of a rigid frame. The wheels 19 and 27 separated from one another by a gap. The head 23 attached to wheel shaft 22 prevents the cutting wheels 19,27 from coming in close enough proximity to cut thin sheet materials.

In sum, appellants respectfully submit that the Examiner has not established a prima facie case of obviousness for at least the reasons that: (1) the Double Glass Cutter of Roberts is nonanalogous relative to the rotary cutter for thin sheet materials recited in claims 1, 2, 6, 18, 20, and 21 of the present application; and (2) the Double Glass Cutter of Roberts is not operable for thin sheet materials. Accordingly, appellants request the Board reverse the Examiner’s rejection of claims 1, 2, 6, 18, 20, and 21.

(2) Claims 3-5, 7-12, 15-17, 19, and 22-30:

Appellants respectfully direct the Board to the comments above as they also apply to claims 3-5, 7-12, 15-17, 19, and 22-30. For at least those reasons, appellants respectfully request the Board reverse the Examiner’s rejection of claims 3-5, 7-12, 15-17, 19, and 22-30. The comments provided below, however, will establish the further patentability of claims 3-5, 7-12, 15-17, 19, and 22-30.

Regarding claims 3-5, 7-12, 15-17, 19, and 22-30, a prima facie case would necessarily have to establish that the teachings of Roberts render the edge angle limitations recited within claims 3-5, 7-12, 15-17, 19, and 22-30 of the present application to be obvious.

³⁹ In re Oetiker, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992), citing In re Demininski, 230 USPQ 313, 315 (Fed. Cir. 1986)

In the rejection, the Examiner indicates that “[t]he reference appears to show the claimed details of the blade such as a diameter to width ratio of less than 10 and an edge angle of approximately 45 degrees. If the article is not approximately 45 degrees however it would appear to be an obvious matter for an artisan to specify such an angle which would create no new or unobvious results.” No support is provided for that statement. In the interview of 8/15/02, the Examiner demonstrated that he believed FIG.5 of Roberts discloses a wheel that appears to have an edge angle of approximately 45 degrees. The Examiner indicated that he arrived at that conclusion by scaling FIG.5 off of the patent. The Examiner’s rejection appears, therefore, to be based on information scaled from the drawings of Roberts, and/or Examiner opinion.

Appellants respectfully submit that stated rejection and the Examiner’s explanation in the Interview of 8/15/02 do not provide a prima facie case of obviousness. Section 2125 of the MPEP indicates that “PROPORTIONS OF FEATURES IN A DRAWING ARE NOT EVIDENCE OF ACTUAL PROPORTIONS WHEN DRAWINGS ARE NOT TO SCALE” and cites In re Wright as support. In In re Wright, the CCPA noted that the reference relied upon by the PTO contained no disclosure indicating that the drawings were to scale. The CCPA then stated that “[a]bsent any written description in the specification of quantitative values, arguments based on measurement of a drawing are of little value”.⁴⁰ The same situation exists in Roberts. There is nothing in Roberts indicating that the drawings are to scale. In fact, there is no written information at all regarding the edge angle of the wheels 19,27. Hence, information scaled off of the drawing is of little value and cannot be relied upon to establish obviousness.

Even if one does scale off of the drawing, however, the drawing does not show a wheel having an edge angle in *or close to* the broadest claimed edge angle range of “not less than forty degrees and not more than fifty degrees”. FIG. 5 of Roberts is shown

⁴⁰ In re Wright, 193 USPQ 332, 335 (CCPA 1977) citing In re Chitayat, 161 USPQ 224 (1969) as support.

below, marked-up to illustrate the angle shown:

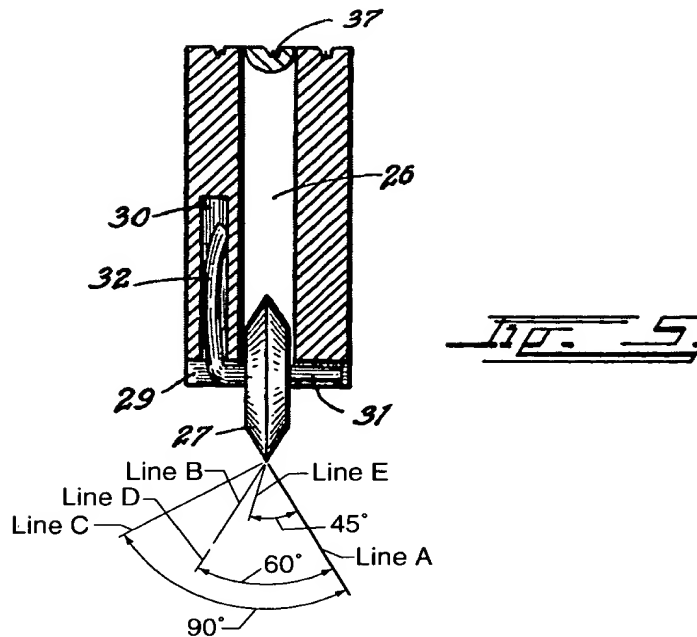
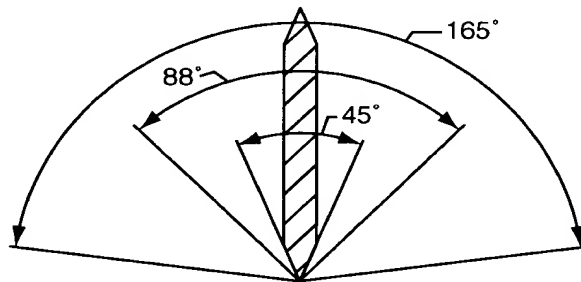


FIG.5, as shown above, was scanned directly off of the patent copy and slightly enlarged. None of the proportions of FIG. 5 were changed. Lines A and B are extensions of the edge surfaces of wheel 27. Lines C, D, and E were made with the angle function of a computer aided drawing (CAD) software package, using Line A as a reference line. Line C is perpendicular (90°) to line A. Line D is at sixty degrees (60°) to line A. Line E is at 45 degrees (45°) to Line A. Line D, at sixty degrees (60°) to Line A, is clearly substantially co-linear with line B. Hence, the edge angle disclosed by Roberts (i.e., 60°) is significantly outside the broadest range of edge angles claimed in the present application. Consequently, there is no support within the drawing to support a prima facie case of obviousness.

Finally, even if one assumes arguendo the rejection does provide a prima facie case of obviousness with respect to the claimed edge angle limitations, appellants have rebutted that case with facts. Regarding the Examiner's statement that "[i]f the article is not approximately 45 degrees however it would appear to be an obvious matter for an artisan to specify such an angle which would create no new or unobvious results", appellants refer to the materials pertaining to glass cutter wheels and the declaration provided in appellants' response of March 6, 2002. The materials include pertinent pages

from a Fletcher-Terry Company brochure describing glass cutting products. The “Wheel Specification Guide” contained therein clearly shows that the glass cutting wheels available have edge angles between 94° and 160° . No glass cutting wheels are offered having an edge angle even close to that claimed in the present application. In addition, appellants submitted a declaration from Mr. Vincent Kozyrski, an employee of The Fletcher-Terry Company, with the March 6, 2002 response. The Fletcher-Terry Company has been in the business of manufacturing glass cutting devices *since 1868*. In his declaration, Mr. Kozyrski states that bevel edge cutting wheels for a glass cutting device typically have an edge angle of approximately one hundred and twenty degrees (120°). Mr. Kozyrski, an employee of the Fletcher-Terry Company for twenty-nine years, further states that he is not aware of any bevel edge glass cutting wheels outside the range of eighty-eight to one hundred and sixty-five degrees (88° - 165°) that are in use, or have been used, by the public.



The above figure illustrates the substantial differences between the edge angle of the present rotary cutting blade and the edge angle range of the glass cutting wheels historically available to the public. The historical edge angle range (88° - 165°) is significant for what it includes as well as what it excludes. The historical range includes all of the glass cutter wheel edge angles that have been in the public. Stated differently, the range represents those edge angles, known to a company in the glass cutter business since 1868, that are practically operable to score glass. Wheel edge angles outside the historical range are not practically operable for scoring glass. “If proposed modification would render the prior art invention being unsatisfactory for its intended purpose, then

there is no suggestion or motivation to make the proposed modification”.⁴¹ Hence, appellants have factually established that it would not be obvious to one of skill in the art to modify or otherwise produce a cutting wheel in the claimed range of between forty degrees and fifty degrees.

The differences between the claimed device and glass cutting devices, which make the claimed device clearly novel and non-obvious, also make the present rotary cutter safer, more durable, and easier to use than presently available devices for cutting thin sheet materials. The specification as filed discloses problems associated with the prior art, advantages of the claimed invention, and the attributes of the claimed invention that make those advantages possible. For example, the specification describes that prior art rotary cutters having a large diameter and/or a razor type edge often present a safety problem for the user. The present rotary cutter, in contrast, utilizes a small diameter circular cutting blade that minimizes the chance for something to get pinched in the nip formed between the blade and the thin sheet material being cut. The circular cutting blade also has a much broader edge angle than cutting wheels having a razor-type cutting edge. United States Patent Nos. 6,330,750 B1 and 6,105,261 disclose that a razor-type blade typically has a cutting edge angle in the range of ten to thirty degrees (10° - 30°). The broad edge angle of the present cutting blade is significantly less apt to cut a compliant material (e.g., skin tissue) than a cutting wheel having a razor-type cutting edge. In fact, it is the appellants’ experience that the circular cutting blade of the present rotary cutter will not cut a compliant material (e.g., skin tissue) under normal operating conditions. In his September 6, 2002 declaration, Mr. Kozyrski states “I have on numerous occasions passed a cutting blade of the type described and claimed in U.S. Patent Application Serial No. 09/822,136 in rolling engagement with my skin using a force equal to or greater than that necessary to cut thin sheet materials. I have never cut my skin using a cutting blade of the type described and claimed in U.S. Patent Application Serial No. 09/822,136.”

The present specification also discloses that the present invention rotary cutter provides significant advantages in durability over other types of thin sheet material cutters. For example, the specification identifies that rotary cutters with a thin, razor-edged cutting blade are susceptible to damage and dulling. United States Patent No. 6,330,750 B1 makes the same point in then context of scalpel blades having razor-type cutting edges.

⁴¹ See MPEP §2143.01 “THE PROPOSED MODIFICATION CANNOT RENDER THE PRIOR ART UNSATISFACTORY FOR ITS INTENDED PURPOSE”, citing In re Gordon, 221 USPQ 1125 (Fed. Cir.

The claimed rotary cutter, in contrast, utilizes a relatively thick cutting blade with a relatively broad edge angle that is quite durable. The relatively substantial thickness and the small diameter also allow for cost-effective manufacturing techniques that increase the hardness and therefore the durability of the cutting edge. Specifically, the cutting blade of the present rotary cutter is preferably coined from strip stock. The material in the region of the cutting edge is work hardened during the coining process and subsequently ground to the broad edge angle.

In his September 6, 2002 declaration, Mr. Kozyrski describes the wear and durability tests conducted on the claimed rotary cutter blade, and a pair of retail rotary cutting blades having a razor-type cutting edge angle. All of the cutting blades were mounted within a computerized numerically controlled machine and operated under similar circumstances. The first retail rotary cutting wheel cut approximately 2212 feet of fabric before deteriorated cutting wheel performance caused the test to be halted. Upon inspection of the first retail cutting wheel, it was determined that the poor performance of the cutting blade was caused by chipping of the cutting blade apex. Similarly, the second retail rotary cutting wheel cut approximately 4027 feet of fabric before deteriorated cutting wheel performance caused the test to be halted. Here again, inspection revealed substantial chipping of the cutting blade apex. Two rotary cutting blades of the type described and claimed in the present application, in contrast, each cut 5280 feet of fabric before the test halted. At the conclusion of the tests, the cutting blades were both operating satisfactorily. In fact, inspection revealed that the cutting blades each had inconsequential wear on the cutting blade apex. In the 9/6/2002 declaration, Mr. Kozyrski states “it is my opinion that the cutting blades could continue to operate significantly beyond the 5280 feet (1 mile) of fabric cutting performed in the aforesaid tests.” In short, the rotary cutter wheels of the claimed rotary cutter are substantially more durable than cutters having a razor-type edge.

The present rotary cutter device is also distinguishable from cutting devices having a razor-type cutting edge for other reasons. Appellants submitted materials entitled “Passenger Information” which was downloaded from the website of the Federal Aviation Administration (<http://cas.faa.gov/faq.html>). The FAA materials state that knives, cutting

instruments, scissors, and straight razors are prohibited from being carried beyond passenger screening checkpoints. For purposes of conducting the interview of 8/15/02 with Examiner Watts, the undersigned attorney presented a rotary cutter of the type claimed in United States Patent No. 09/822,136 at the passenger screening checkpoints prior to boarding the flights to and from Washington D.C. Each time, the rotary cutter was inspected and allowed by the screening personnel within the carry-on briefcase of the undersigned attorney.

In short, the rotary cutter for cutting thin sheet materials as recited within claims 3-5, 7-12, 15-17, 19, and 22-30, including the edge angle limitations, is non-obvious in view of the Double Glass Cutter of Roberts. The advantages described above clearly establish that the claimed device is not only significantly different from a glass cutter, but also a significant improvement over existing thin sheet material cutters; an improvement attributable to the claimed characteristics of the cutter, including the edge angles. Accordingly, appellants respectfully request the Board reverse the Examiner's rejection of claims 3-5, 7-12, 15-17, 19, and 22-30.

(3) Claims 13 and 14:

Appellants respectfully direct the Board to the comments above as they also apply to claims 13 and 14. For at least those reasons, appellants respectfully request the Board reverse the Examiner's rejection of claims 13 and 14. The comments provided below, however, will establish the further patentability of claims 13 and 14.

Claims 13 and 14 of the present application recite a hand-held rotary cutter for cutting thin sheet materials that includes a handle and a replaceable cutting blade and clip assembly. The cutting blade includes a diameter and a thickness, and the diameter is not greater than fifteen times the thickness. The cutting blade is rotatably mounted on the clip. The cutting blade and clip assembly is attached to the handle and can be selectively replaced. The Roberts device does not include a replaceable cutting blade and clip assembly. The rejection does not identify any replaceable cutting blade and clip assembly within Roberts. "To establish prima facie obviousness of a claimed invention, all of the claim limitations must be taught or suggested by the prior art".⁴² Hence, no prima facie

⁴² See MPEP §2143.03 "All Claim Limitations Must be Taught or Suggested", citing In re Royka, 180 USPQ 580 (CCPA 1974).

case has been established. Accordingly, appellants respectfully request the Board reverse the Examiner's rejection of claims 13 and 14.

In view of the above, Appellants respectfully requests the Board of Patent Appeals and Interferences reverse the rejections in the present case and allow this case to pass onto issuance. Appellants provide herewith a check in the amount of \$640.00 pursuant to 37 CFR § 1.117(b) and (c) for the Notice of Appeal and the Appeal Brief, respectively. In the event any additional fee is due with this filing, please charge our Deposit Account No. 13-0235.

Respectfully submitted,

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IX. APPENDIX:

The claims involved in the present appeal are as follows:

1. A hand-held rotary cutter for cutting thin sheet materials, comprising:
a handle having a hand grip portion ; and
a circular cutting blade having a cutting edge, a diameter, and a thickness, wherein the cutting blade is pivotally mounted to the handle ;
wherein the diameter of the cutting blade is not greater than fifteen times the thickness.
2. The hand-held rotary cutter of claim 1 wherein the diameter of the cutting blade is not greater than ten times the thickness.
3. The hand-held rotary cutter of claim 2, wherein the cutting edge includes an edge angle that is not less than forty degrees and not greater than fifty degrees.
4. The hand-held rotary cutter of claim 3, wherein the cutting edge includes an edge angle that is not less than forty-three degrees and not greater than forty-seven degrees.
5. The hand-held rotary cutter of claim 4, wherein the cutting edge includes an edge angle that is substantially equal to forty-five degrees.
6. The hand-held rotary cutter of claim 1 wherein the diameter of the cutting blade is substantially equal to six times the thickness.
7. The hand-held rotary cutter of claim 6, wherein the cutting edge includes an edge angle that is not less than forty degrees and not greater than fifty degrees.
8. The hand-held rotary cutter of claim 7, wherein the cutting edge includes an edge angle that is not less than forty-three degrees and not greater than forty-seven degrees.
9. The hand-held rotary cutter of claim 8, wherein the cutting edge includes an edge angle that is substantially equal to forty-five degrees.

10. The hand-held rotary cutter of claim 1, wherein the cutting edge includes an edge angle that is not less than forty degrees and not greater than fifty degrees.
11. The hand-held rotary cutter of claim 10, wherein the cutting edge includes an edge angle that is not less than forty-three degrees and not greater than forty-seven degrees.
12. The hand-held rotary cutter of claim 11, wherein the cutting edge includes an edge angle that is substantially equal to forty-five degrees.
13. A hand-held rotary cutter for cutting thin sheet materials, comprising:
 - a handle having a hand grip portion ; and
 - a replaceable cutting blade and clip assembly , wherein the cutting blade includes a diameter and a thickness, and the diameter is not greater than fifteen times the thickness, and the cutting blade is rotatably mounted on the clip;
 - wherein the cutting blade and clip assembly is attached to the handle and can be selectively replaced.
14. The hand-held rotary cutter of claim 13 wherein the diameter of the cutting blade is not greater than ten times the thickness.
15. The hand-held rotary cutter of claim 14, wherein the cutting edge includes an edge angle that is not less than forty degrees and not greater than fifty degrees.
16. The hand-held rotary cutter of claim 15, wherein the cutting edge includes an edge angle that is not less than forty-three degrees and not greater than forty-seven degrees.
17. The hand-held rotary cutter of claim 16, wherein the cutting edge includes an edge angle that is substantially equal to forty-five degrees.

18. A hand-held rotary cutter for cutting thin paper products, comprising:
a handle having a hand grip portion ; and
a circular cutting blade having a cutting edge, a diameter, and a thickness, wherein the cutting blade is pivotally mounted to the handle ;
wherein the diameter of the cutting blade is not greater than fifteen times the thickness.
19. The hand-held rotary cutter of claim 18 wherein the cutting edge includes an edge angle that is not less than forty degrees and not greater than fifty degrees.
20. A rotary cutter for cutting thin sheet materials, comprising:
a support member ; and
a circular cutting blade having a cutting edge, a diameter, and a thickness, wherein the cutting blade is pivotally mounted to the support member ;
wherein the diameter of the cutting blade is not greater than fifteen times the thickness.
21. The rotary cutter of claim 20, wherein the diameter of the cutting blade is not greater than ten times the thickness.
22. The rotary cutter of claim 21, wherein the cutting edge includes an edge angle that is not less than forty degrees and not greater than fifty degrees.
23. The rotary cutter of claim 22, wherein the cutting edge includes an edge angle that is not less than forty-three degrees and not greater than forty-seven degrees.
24. The rotary cutter of claim 23, wherein the cutting edge includes an edge angle that is substantially equal to forty-five degrees.

25. A rotary cutter for cutting thin sheet materials, comprising:
a handle having a hand grip portion; and
a circular cutting blade having a cutting edge, a diameter, and a thickness, wherein the cutting blade is pivotally mounted to the handle;
wherein the cutting edge includes an edge angle that is not less than forty degrees and not greater than fifty degrees.
26. The rotary cutter of claim 25, wherein the cutting edge includes an edge angle that is not less than forty-three degrees and not greater than forty-seven degrees.
27. The rotary cutter of claim 26, wherein the cutting edge includes an edge angle that is substantially equal to forty-five degrees.
28. A rotary cutting blade for cutting thin sheet materials, comprising:
a body having a diameter and a thickness;
a cutting edge extending around the periphery of the body, the cutting edge includes an edge angle that is not less than forty degrees and not greater than fifty degrees;
an axle aperture that extends side to side through the thickness of the body;
wherein the diameter of the cutting blade is not greater than fifteen times the thickness.
29. The cutting blade of claim 28, wherein the cutting edge includes an edge angle that is not less than forty-three degrees and not greater than forty-seven degrees.
30. The cutting blade of claim 29, wherein the cutting edge includes an edge angle that is substantially equal to forty-five degrees.